AMERICAN NURSERYMAN

Chief Exponent of the American Nursery Trade

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AMERICAN NURSERYMAN

Chief Exponent of the Nursery Trade

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The Mirror of the Trade

GOVERNMENT NURSERIES.

Though they are most interested in the subject as a class, few nurserymen realize the number of government nurseries which have sprung into being in the past few years. But enough of them are faced with the problem in their own states to realize how acute it is becoming. The report presented by E. C. Hilborn for the committee on federal and state-owned nurseries at the convention of the American Association of Nurserymen, printed in the July 15 issue of this magazine, aroused considerable interest on the part of readers, some of whom sought additional copies to be placed where they might do most good. Any nurseryman who did not read that report should do so, for the matter is one that affects the entire industry to a large measure.

The end apparently is not yet. In this issue of The American Nurseryman appears report of the project to plant 1,820,000 acres to trees, under the direction of the United States forest service, as a means of alleviating drought and soil erosion in the great plains region. For this purpose 3,500,000,000 trees are expected to be raised in the nurseries before the project is completed. After reading the statement of the chief forester in regard to the project, one may conceive the ramifications which are possible. The subject is one to which nurserymen the country over may well give thought, and action.

NURSERY AGREEMENT HEARING.

From the full report of the hearing on the nurserymen's national marketing agreement in the preceding issue of The American Nurseryman, the difference in attitude of those who spoke for and against doubtless impressed the readers of that interesting account. A review of the arguments indicates rather clearly that their opposition or support was not to the same thing. Those who opposed the marketing agreement objected almost entirely to the open price plan and the difficulty of its operation. There was scarcely a voice raised against the agreement as a whole on any other account, though there were criticisms of certain provisions, either as to their wording or their effect. Those nurserymen, on the other hand, who spoke for the agreement dwelt not so much upon the aspect of prices as on trade practices. Their complaint was chiefly of unfair competition, mainly due to failure to adhere to good practices and established standards. Because these practices and this type of competition have been aggravated by the demoralization of prices in a time of large supply and small demand, accompanied by an urgent necessity for ready cash, no matter whether it was obtained from operations or from inventory, the proponents of the agreement believed that correction of the situation lay in firm prices.

The avowed purpose of the agricultural adjustment act, of course, is to reestablish a price level for agricultural products on a parity with that before the war; in other words, to enable the farmer to obtain a price for his products commensurate with that which he pays for manufactured goods. Mother Nature has made more effective strides toward that goal during the present summer than Congress had any idea could be accomplished. The effects are being seen in nursery fields now, though the full reflection on prices may not be observable until another selling season.

Should the price level go up as predicted, the problem confronting the A. A. A. as well as the nursery industry will be whether a marketing agreement shall be put into effect for the benefit to be derived from the enforcement of trade practices, proper standards and fair competition. There is no question that these are needed and wanted. There is question whether the A. A. A. can enter into an agreement for those purposes without a price provision being attached. This angle was suggested, but little dwelt upon at the New York hearing. The revised marketing agreement which will be forthcoming from Washington in a few weeks will no doubt reflect the attitude of the administration in this regard. On that account, the new draft, which is likely to be considerably changed from the one submitted at New York, will be awaited with keen interest by nurserymen.

CONVENTION AFTERTHOUGHTS.

The convention floor is the place for debate and discussion, and the news report of the annual meeting of the American Association of Nurserymen in the preceding issue of this magazine reflected the swing of argument at New York. The thoughts that come to those who attended the convention or read the account of it are now rather of deliberation than debate. Two big topics confronted the gathering at New York. That of the marketing agreement is now in the hands of the authorities at Washington. The other, that of revitalization of the association, is in the hands of a committee for consideration and, it should not be forgotten, in the province of the members of the association and, indeed, of the industry at large.

The question broadly seems to be whether an organization of between 300 and 400 members is representative of the industry as a whole. Numerically it is not, obviously, in an industry comprising several thousand establishments. As to acreage or annual receipts, the showing is much better, for a total of the acreages planted by A. A. N. members amounts to a substantial proportion of the total area in nursery stock in the country. More than that, the convention attendance indicated an interest in the sessions not often equaled

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AMERICAN NURSERYMAN

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The Chief Exponent of the American Nursery Trade

The Nurseryman's Forte:
To Make America More Beautiful and Fruitful

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Mnemonic Planting Key Described

E. W. Chaffee, Landscape Architect, Urges Planting Key of Letters to Save Time and Eliminate Errors

Most nurserymen and landscape architects make use of planting keys, the usual key being constructed by listing the varieties used and numbering them. These numbers are then used on landscape plans.

Such a system is easily made up, but, unfortunately, has several faults, chief of which is the fact that arbitrary numbers are hard to memorize and, hence, lead to errors or else the necessity of frequent reference to the key.

The use of letters instead of figures can be made to overcome most of these faults and to provide some advantages which the number key does not have. A key of this sort has proved so satisfactory after three years' use that the writer believes it should be of interest to the trade.

Letters Indicate Plants.

In this letter system, two capitals are used to designate each tree or shrub, and as 676 two-letter combinations are possible, it answers most requirements. Obviously, only ninety-nine combinations of two figures can be made.

The important feature of the system is the choice of letters used. By selecting a pair which easily calls to mind the plant designated, one can build up a code that is rapidly and automatically learned by designers, salesmen and planting foremen and, once memorized, seldom will be confused.

Thus, Spiræa Vanhouttei can become, without effort, VH in the code, and a symbol like JB is never forgotten, once it becomes attached to Japanese barberry.

Such symbols, designed to aid the memory, are known as mnemonic symbols. The practical nurseryman need not be alarmed by the use of such an unusual word, if he will remember that the symbols have been in common use in other professions for many years. For instance, all chemists use a capital N to indicate nitrogen, C for carbon, O for oxygen, etc., and have so used them since the memory of man runneth not to the contrary. Mnemonic symbols are also in quite common use in factories, where a large number of parts or articles must be indexed, inventoried and described. So, after all, we are only adapting a tried and proved method.

A mnemonic key, once made up, is a flexible and useful little gadget to have around any nursery, and even the boys in the storage cellars will chalk up RT on a box of hardwood cuttings in preference to writing out the full name, without any orders from the office and with a saving in time and accuracy to boot.

But it is, of course, in the designing department that letter symbols find their greatest advantage. A designer will prefer to letter in AW-6 on a plan, in preference to your old key, 123-6, even if he is quite sure what 123 stands for. Perhaps he is not quite sure and writes it 123 anyway, in the press of a busy season, with more or less disaster to all concerned! And while the old-timers can and do learn the number keys, it is well to remember that new men, especially new salesmen, are always coming into any live organization, and each must wrestle with the key problem and master it, whichever type is adopted.

Even if the designing staff, therefore, can be depended on to make no mistakes, it is well to remember that the plan must be shown by a salesman, and, perhaps, followed by a foreman hastily trained, reading the sketch in a windy yard with one eye cocked on three diggers who must be kept going at any cost. It is satisfying to be sure of the key under such conditions, one of the conditions being that the key is probably in the foreman's coat under the tree yonder.

Another source of error in numerical keys, no matter how well memorized, is confusion between the key numeral and the quantity figure. We know, of course, that we always put the key number first, but, looking at both, the human eye will make an occasional mistake, especially if hurried.

These errors, relatively infrequent in the office, more common in the field, are impossible in a letter code. Contrast SB-35 with 36-35 read upside down by a young man in a hurry.

Developing a Key.

In starting a mnemonic code, no hard and fast rules can be laid down, and it is not the purpose of this article to propose a universal code, but merely to show its advantages and the steps whereby each individual can compile his own. Short of a millenium, most nurserymen will prefer to do this no doubt, maintaining a certain element of secrecy in their key lists.

As with the number system, the first step is a master list, preferably a small notebook, in this case with a double page for each initial letter. The first page will be A, and under it AA, AB, AC, etc. Then, taking our inventory or price list of plant materials, we proceed to select two letters for each variety, that shall remain unchanged, the property of that particular tree or shrub for all time; and, of course, we select a pair that conveys a hidden meaning.

For this, we may take a clue from the botanical name, the common name or a local nickname. Spiræa Vanhouttei becomes VH, VA, SV, BW, etc. These abbreviations will be self-evident. Whichever one is chosen should be adhered to and never changed thereafter. The odd letters, such as X, work in beautifully for such varieties as Lilac Charles X, CX, and tamarix, TX. Once designated, the code is entered in the master book and we proceed to the next item.

Completed, the book will have many gaps, to be filled in gradually here and there, as fashions change and we add new items to our line, but our 676 combinations will hardly be exhausted unless we run in unusually long lists of named varieties. If desired, three letters may be used for perennials.

New Groupings Possible.

In the printed keys, a new departure may appear. Because the mnemonic code is so easily learned and frequent reference is unnecessary, we may group the subjects according to characteristics, instead of alphabetically, indicating height for instance. This, again, is a matter that each user will decide for himself.

Whatever the form, we find ourselves in possession of something that fits in wonderfully well with the routine records of the nursery. Primarily it is intended for the designing staff, of course, but almost unconsciously we begin using it on labels, stakes, storage bins and inventory sheets. The stenographers slip it into their notes, and it shows up here and there in the salesmen's long-winded letters. In short, we begin to cut out a lot of Latin and Greek in favor of short, terse capitals. Because if PG means Hydrangea paniculata grandiflora and nothing else, why write Hydrangea paniculata grandiflora?

Time? Yes, it takes a little more time to make up such a key. But once finished it saves time endlessly, like any other job well done.

Plan Huge Forest Belt

Federal Government Embarking on Largest Reforestation Project Yet Undertaken Here

President Roosevelt gave the signal July 21 for the beginning in the great plains area of the United States of the largest reforestation project ever undertaken outside Soviet Russia—an experiment in climate control to combat the ravages of drought.

In an executive order, the President allocated $15,000,000 from the $525,000,000 drought relief fund for the beginning of work on a $75,000,000 forest shelter belt 100 miles wide and extending more than 1,000 miles through the heart of the drought area from the Canadian border to the Texas Panhandle.

Announcement of the President's action and of the gigantic undertaking was made by Secretary Wallace, who authorized the forest service to use up to $10,000,000 of the $15,000,000 allocated to begin work on the project immediately.

The project will take ten years to complete, will embrace a total of 20,000,000 acres, of which 1,820,000 will be actually planted to trees, and will provide 100 parallel windbreaks, or strips of trees with a mile of farm land between each strip.

Drought Alleviation Purpose.

The hundred-mile belt of trees will run through the Dakotas, Nebraska, Kansas and well into the Texas Panhandle, "as a means of ameliorating drought conditions."

The plan is a modification of one devised by President Roosevelt himself and in which no provision was made for the intervening areas between the parallel strips of trees. The modification, suggested by the forest service, is calculated to prevent more effectively further wasting away of rich agricultural lands through erosion by wind and rain and to alleviate the extreme high temperatures accompanying lack of precipitation.

Each of the hundred windbreaks will be about seven rods wide, covering fourteen acres out of each square mile.

Billions of Trees Required.

More than ninety per cent of the estimated ultimate outlay on the project will go to farmers, largely for employment of labor for plowing, fencing, planting and caring for the trees. Of the total $75,000,000 to be expended, about twenty-five per cent is expected to be spent during the next twelve to eighteen months.

Fencing of each of the windbreaks is planned as a protection against damage from cattle. A chain of nurseries will be established for growing of seedlings to be planted, but actual planting is not expected to begin until the fall.

About 3,500,000,000 trees are expected to be raised in the nurseries before the project is completed. Illustrative of the volume of work involved, estimates for the first six months' operations call for about 520,000 man days. The total area involved is placed at 100,000 square miles, or 64,000,000 acres, including land to be cleared of present growth.

Only the land to be planted to the shelter strips will be acquired by the government through purchase, lease or coöperative agreement with land owners.

"This will be the largest project ever undertaken in this country to modify climatic and other agricultural conditions in an area that is now constantly harassed by winds and drought," said F. A. Silcox, chief forester.

"The great plains have been suffering acutely from prolonged drought. The economic and social consequences are extremely serious. The dust storm which recently blanketed the country from the Dakotas to the Atlantic seaboard is an ominous reminder of the incipient desert conditions in the great plains area.

"If the surface velocity of the wind over a wide area can be broken and decreased even slightly, soil will be held in place, the moisture of the soil will be conserved, and havens of shelter will be created for man, beast and bird.

"This plan aims at permanent benefit and protection of the great plains belt and east of it.

Native Trees to Be Planted.

"Large-scale planting of the windbreaks will be under way by 1936, and the entire area, it is expected, will be planted within the next ten years, at a rate of about 180,000 acres per year.

"Trees of native origin will be used. One of the best and most adaptable trees of the region is green ash, and this will be supplemented by native forms of hackberry, elm, burr oak, etc., on heavier soils, and on the higher, lighter and sandy soils, ponderosa pine and red cedar may be employed. In some cases, Black Hills spruce and native cottonwoods may be utilized."

Pointing out that this was "not an untried undertaking," he added:

"Since early settlement of the prairies, settlers have frequently planted strips of woods to protect their homes and fields from the blistering winds of summer and the cold blasts of winter.

"In more recent years, the federal and state governments have coöperated in encouraging windbreak planting by distributing trees from their nurseries."

IN OHIO GOVERNMENT NURSERY.

Twenty million trees are expected to be produced by next spring on the government nursery situated on the Muskingum river near Zanesville, O., according to R. L. Bazler, superintendent of forestation and soil erosion work at Camp Muskingum.

During the past year C.C.C. boys from Camp Muskingum gathered 8,335 pounds of tree seeds and under the direction of Mr. Bazler planted the seeds on twenty-eight acres for nursery purposes. These 20,000,000 trees, which will be transplanted early next spring, will furnish plantings for twenty-seven communities in the state of Ohio.

According to the report, C.C.C. camp boys during the year just closed planted a total of 478,436 trees.

FORESTERS TO VISIT EUROPE.

A group of leading foresters and lumbermen from the United States sailed July 26 to study the methods employed in Germany and Austria by which private forests have become a profitable enterprise. They will study sustained forest production, as it has been practiced in these countries for many generations, as well as forest management, game preservation, selected cutting, reforestation, and markets for wood products.

The group includes W. R. Brown, assistant treasurer of the Brown Co., Berlin, N. H.; C. H. Guise, professor of forest management at Cornell University, Ithaca, N. Y., and officers of a number of large lumber companies.

Dr. Franz Heske, the director of the famous forestry school at Tharandt, near Dresden, has been in the United States during the past three months, getting acquainted with conditions that face American foresters, and he will take charge of the group upon arriving in Germany. They will travel by bus from Berlin through eastern and southeastern Germany, into Czechoslovakia, Austria and perhaps parts of Hungary. They will have an opportunity not only to see the forests, but to study costs, distribution of material and actual operations.

This tour is part of the program of the Carl Schurz Memorial Foundation, Inc., and the Oberlaender Trust, the purpose of which is to benefit the American people by studying those special achievements of the German and Austrian people which are outstanding, and introducing into the United States such as are adaptable to American conditions. Private forests for private profit is one of the fields in which the German people have excelled, and first-hand study of successful private forestry operations by influential American timberland owners will, in the opinion of the foundation, assist in developing the important program of permanent forest management now required by the lumber code.

CANADIAN TARIFF CHANGES.

As the result of certain budget resolutions recently passed by the Canadian government, several revisions upward have been made in the duties on nursery stock imported from foreign countries. Chief among the increases are those on fruit trees, with a rise from the former rate of 3 cents each to 7½ cents each on apple, 3 cents to 9 cents each on pear, plum, cherry, apricot and quince, and 3 cents to 6 cents each on peach, including June buds. On asparagus roots, rhubarb roots and raspberries the method of imposing the tariff was changed from ad valorem to count.

TIMES HAS GARDEN PAGE.

The New York Times is the latest large metropolitan newspaper to add a garden page. This appears each Sunday and is in the charge of men well known in the horticultural field. F. F. Rockwell is the editor, and Derril W. Hart is on the advertising staff. Informative illustrated articles are featured. The addition of a garden page to this great newspaper is one more indication of the widened interest in gardening in this country.

Stabilization Plan Based on Cost Data

Standardized System of Computing Costs in Nursery Trade Told to Nurserymen at New York Convention by John Surtees

The first principle in establishing a code or marketing agreement is to see that whatever plan is finally adopted will stabilize the industry. Further, it must be a plan that will guarantee a fair wage to the worker, a fair price to the client and a fair return to the owner.

After giving the matter a great deal of thought, besides putting the idea into practical operation, I feel there is only one plan that will give every one of the above results, and that plan is to become familiar with costs of production. An industry that attempts to work without a knowledge of the costs of production is like a ship without a rudder. It will be at the mercy of every wind that blows; it will veer in every direction, and get nowhere.

I am well aware that just as soon as costs of production are mentioned to nurserymen there comes a feeling of uneasiness. Almost every nurseryman believes that it is practically impossible to arrive at costs in his business. A number of firms have engaged expensive certified accountants and, after spending considerable sums, have found the systems created too top-heavy and too expensive to operate year after year.

From Common Sense Point.

But let us approach the question from the standpoint of plain common sense and not from the standpoint of a highly paid certified accountant. The trouble has been that accountants have no knowledge of the particular problems of the nursery trade, and their methods invariably subordinated the business to the system they sought to install.

What the trade wants is a system that can be made applicable to every nursery, large or small, wholesale or retail. In other words, it must adopt a uniform standard of costs.

It has been my privilege to submit a plan, which, I believe, carries out all these requisites. It is simple in its conception, easy to operate, inexpensive to install and applicable to every nursery, no matter where located.

I am not here to advocate that this convention adopt my plan. But I am here to put forth a proposal that a committee be appointed to look into any plan based on costs of production that will provide the stabilization the industry needs.

There is nothing to be afraid of in costs of production. Such data are the basis of all industries, and on them rests the success or failure of the firm. There is absolutely no reason why this industry cannot be based on the same principle.

Factors in Costs.

The items that come under the heading of costs of production are materials, labor and overhead.

Take materials first. All plants have certain habits, and these habits are definitely known. Practically every plant grown commercially is listed in "Standardized Plant Names" and every one of those plants can be placed in a definite group, those of similar habits being placed in one group. As an example, we in Outpost Nurseries, Inc., grow approximately 550 varieties, and these varieties have been condensed into 100 groups, with their habits clearly defined.

The next step is to enumerate the labor that is required to bring the plants to maturity. If there is one thing that is stable in the nursery business, it is this labor. All operations are universal, the only difference being in the equipment used. So it is fairly easy to enumerate this labor, operation by operation, until the plants reach the salable sizes.

Thus it is possible to standardize the groups of plants, standardize their habits and standardize the labor.

Operations Standardized.

Further, by a series of labor charts covering every operation it is possible to standardize each operation on the basis of time!

At this point I may say that my firm has compiled a series of labor charts, taken from records covering many years, that include every operation both for internal work and for landscaping projects. They embrace every size of plant, from the lining-out stage to the mature sizes. These charts are based on time, at a definite rate of wages, and every conceivable operation, whether by hand or labor-saving machinery, can be embodied in these charts and applied to every nursery in the country.

The costs, being based on time, are standard for all time. It will take just as long to dig a hole twenty years from now as it does today. And even if you are paying 50 cents per hour for your labor, it will take you just as long to dig that hole as if you were only paying 25 cents an hour. In other words, wage scales may vary, but time never will.

Overhead.

The next step is to standardize overhead. Here you have the most important element of the three bases of costs. Unfortunately, it is the element that is least understood. Most nurserymen may know what their materials cost; they may even know what their labor costs. But they invariably guess at their overhead, and ninety-nine times out of 100 they guess wrong. There is no reason why this element should be left to guesswork.

Overhead, like labor, is based entirely on time. Your managers, your superintendents, your clerks, your salesmen, your rent and everything else you can mention are paid for at so much per hour, week or month. The two items, labor and overhead, go hand in hand, so that all overhead charges should be placed entirely against labor.

No matter what nursery you go into, it is safe to assume that for every dollar that is spent in direct labor, at least another dollar is spent in expenses. In other words, the overhead is at least 100 per cent of the direct labor, and in most nurseries it is considerably more. So, in figuring costs of production, this overhead against the labor should be included every year. There is no guesswork about it. It is plain solid fact and cannot be ignored.

But while it is impossible to standardize the actual overhead, as each individual firm's expenses vary considerably, it is possible to standardize the method by which that overhead should be applied. This will do away with the idea that because a firm employs cheap labor or pays low rentals it can therefore produce cheaper. This is not necessarily so, as it is a well known fact that the cheaper the labor the higher the overhead.

This, roughly, is the plan I suggest. While it has its defects, it is the one plan that will stabilize the industry more than any other suggested so far.

Cost of System Small.

And what will it cost to operate? Books giving the standard grouping of plants, with their habits and labor, and the book of labor charts could all be printed up at a low figure. Any bookkeeper can follow the system and arrive at the cost of production from these books, and as every firm employs at least one bookkeeper, there need not be any additional cost on this score. And bear in mind that once the cost of production has been arrived at, by groups, the basis established in the first year stands for all time. Should wages change in any one year, then all that is needed

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On this page appears the address of John Surtees, Ridgefield, Conn., on the topic "Nursery Costs," given at the recent A. A. N. convention in New York. The considerable interest expressed in the remarks by those in attendance suggested that the trade in general might have similar feelings, particularly in view of the fact that a number of inquiries on the subject have been addressed to Mr. Surtees since the meeting and because a committee was named to study the possibilities of the plan offered.

Prior to giving his talk on costs, Mr. Surtees stressed the importance of cost knowledge in applying for government loans, stating that one of the requirements is that an applicant must be able to show what his costs were during the previous five years.

Offering to assist any nurseryman in obtaining financial aid through the Reconstruction Finance Corporation, Mr. Surtees said, "The more firms that apply the better it will be. The psychology of this is that if only one nurseryman applies for such a loan, not much attention will be paid. But if a number of nurserymen make application, particularly through one agency, then the government will realize that the industry really needs help and will act accordingly."

is to add or deduct the percentage of such change.

While I have gone to some length in explaining the main points of this plan, as I said before I am not here to advocate that this particular plan should be adopted. I merely give this outline to show that costs of production can be arrived at; that by using uniform or standard methods, they are simple and inexpensive to operate.

The plan can embrace every field in the nursery industry, from the work of the propagating department to the handling of salable evergreens, deciduous trees, flowering shrubs, roses, fruits or perennials, by wholesalers, retailers and landscapers. A committee made up of specialists in each line could draw up the various groups. The information could be embodied in one book or in separate books for each division. Such a committee could get all this information in shape and have the plan operating by January 1, 1935.

CONVENTION AFTERTHOUGHTS.

(Concluded from page 2.)

in gatherings of other horticultural trade organizations of much larger membership. A rough compilation of the acreage represented by those in attendance at the New York convention indicated that one-third, if not more, of the nursery acreage of the country was represented there.

In this connection it is well to recall that the horticultural census of 1930 included 7,200 establishments reporting, having a total of 141,133 acres and total annual receipts of $58,182,562. Out of this total, 559 establishments accounted for 87,879 acres and $42,585,669 of sales, these including firms reporting sales of $20,000 annually or over. Establishments reporting annual sales of $5,000, but less than $20,000, numbered 1,089, having 28,544 acres and total receipts of $9,948,102. Those reporting from $250 to $5,000 sales numbered 3,939, with 21,992 acres and sales totaling $5,490,790, while establishments reporting less than $250 annual sales were 1,620 in number, having combined 2,718 acres and receipts of $158,001.

It is obvious that the large wholesale nurseries are well represented in the American Association of Nurserymen, and the membership of former years, being considerably larger than that at present, would include the bulk of the industry's acreage and sales. However, the rapid increase in number of small retail nurseries, an important means of contact with the public, has created a need for their consideration. In consequence, many local and sectional nurserymen's organizations have sprung up. It is not many years since the associations in the industry included only a limited number of state bodies in addition to the A. A. N. Now there are literally scores of trade groups, each functioning in a local territory, but not represented nationally. In addition, there are organizations springing up devoted to one branch, such as the mail-order association in process of formation.

The mere extension of membership of the A. A. N. through the addition of members on a lower dues basis, would not suffice. The diverse interests of various regions and different groups must be served, either as departments of the national organization or by a tie-up with the local, state and regional groups. The point is not merely one of organization, either in scope or form, but of serving the needs and promoting the interests of different groups all with a common purpose, that of growing and selling nursery stock.

NEW PYRAMIDAL BARBERRY.

One of the most interesting of the exhibits at the convention of the American Association of Nurserymen at New York was that of the new pyramidal barberry, Berberis Thunbergii pluriflora erecta, for which the Cole Nursery Co., Painesville, O., is now seeking a plant patent.

This barberry, having considerable resemblance to boxwood because of its formal shape and dense deep green foliage, can be effectively used in its second year, while the type form frequently requires three to four years to provide the desired effect. Little trimming is needed with the new pyramidal form, which greatly reduces labor costs and also eliminates the bare appearance presented after the deep trimming periodically required by hedges of Japanese barberry.

It is believed by the growers that the plant will attain a height of five feet in formal spires and pyramids, yet the subject is equally adapted for shearing into globe shape for accent use in the garden. Normally, the width is about one-third the height of the plant. The subject can be grown successfully even in difficult places.

Compared with the Japanese barberry, the pyramidal form has denser foliage, with larger, glossier and thicker leaves well distributed. In fall, richer colorings are taken on than with the common variety. Berries similar to those on B. Thunbergii are borne more heavily.

Concerning hardiness, experience with the new form indicates it is as good as B. Thunbergii, while its resistance to heat and drought injury is greater. It is rust-immune and so recognized by the bureau of plant quarantine.

PUMP FOR IRRIGATION LINE.

I should like information regarding the installation of a gas engine and pump for my irrigation pipe line. The line is 100 yards long, has an oscillator and uses approximately twenty-five gallons of water per minute. I can get water within twenty feet of the surface by using a pump, pipe and point.

What horse power engine will be required to get twenty-five gallons per minute from a depth of twenty feet and to force it through the pipe at forty pounds' pressure? What type and size of pump will be best? I have figured on getting a secondhand 3-horse power Fairbanks-Morse engine.

Is it necessary to have a pressure tank, or can the water be pumped directly from the pump into the irrigation line? If so, how would the pressure be regulated at about forty pounds' pressure? C. M. T.—Md.

It is understood from the foregoing that the water is for supplying an overhead sprinkling system, in which the sprinkling line is 300 feet long, but it is not clear how many lines will be operated at the same time or how long a supply pipe is needed to reach the sprinkling line from the pump. It is also necessary to know the size of the well and of the supply pipe. There is considerable friction in a long pipe, especially if the size is small, and this makes it necessary to use a more powerful pump and engine to maintain the pressure needed.

Even if only one sprinkling line is to be operated at one time and the supply pipe is 1½-inch or larger, with a length of no more than 200 feet, the writer would consider a 3-horse power engine too small for the purpose, especially if it has been used considerably. A 5-horse power engine is as small as he would recommend, and it might be better to use an engine of 6 horse power, especially if the supply pipe is small and of considerable length, in order to overcome the friction in the pipe supplying twenty-five gallons per minute and to give a pressure of forty pounds, with more than one line in operation.

While a rotary pump could be used for a lift of fifteen feet, it will be advisable to use a duplex or triplex pump for a layout of the specifications named. Such a pump should have 2½ to 2¾-inch cylinders, with a 4-inch stroke, varying according to the work to be done.

SHADE TREE CONFERENCE.

Arborists, plant pathologists, entomologists, horticulturists, foresters and others engaged in scientific or regulatory work pertaining to tree protection or maintenance will be brought together at the tenth annual national shade tree conference to be held August 30 and 31 at the Carnegie Institute, Pittsburgh, Pa. Demonstrations of equipment and educational exhibits of insects and of disease organisms will be presented in addition to an extensive speaking program.

The schedule of addresses and other events is as follows:

AUGUST 30, 9 A. M.

Registration.
Address of welcome, by Mayor W. N. McNair of Pittsburgh.
Response, by President William Middleton, Washington, D. C.
"Shade Tree Insects of the Middle West and Their Control," by J. S. Houser.
"Science and Shade Tree Welfare," by Dr. Haven Metcalf.
"Soil Acidity and Plant Growth," by L. C. Chadwick, Columbus, O.
"The Gypsy Moth Situation in Pennsylvania," by A. F. Burgess.
Luncheon and business meeting, Hotel Webster Hall.

AUGUST 30, 1:30 P. M.

"Fundamentals in the Control of Shade Tree Insects," by E. P. Felt.
"Borer Control Experiments," by C. C. Hamilton.
"Smoke Injury to Shade Trees," by O. E. Jennings.
"Tree Work in the South," by Norman Armstrong.
"Slime Flux," by E. F. Guba.
Discussion.
"Cosmic Rays and Trees," by Ernest Gonzenbach, talk and exhibit in Schenley park.

AUGUST 31, 8:30 A. M.

Demonstration of equipment, in Schenley park, by R. M. Weakley, Warren, Pa.
"Fungi and Their Relation to Trees," by W. H. Rankin.
"Advances in Our Knowledge of the Dutch Elm Disease," by L. R. Tehon, Urbana, Ill.
"Control Activities Relative to the Dutch Elm Disease," by O. M. Liming.
"Distribution of Elm Diseases in the United States," by Curtis May.
Discussion on present status of elm diseases in the United States.
Luncheon and business meeting.

AUGUST 31, 2 P. M.

"The Root System of Chestnut Oak," by O. M. Wood.
"Mycorrhizæ and Their Relation to Shade Trees," by K. D. Doak.
"Recent Developments in the Cornell Shade Tree Experiments," by D. Wyman.
"Experiments on the Fertilization of Shade Trees," by A. P. Beilmann.
Discussion on the fertilization of trees.
Banquet, Hotel Webster Hall.
"History of Shade Tree Conferences," by R. P. Marshall.
Address of retiring president, by William Middleton.

Plants for Wall Gardens

A Comprehensive Plant Materials List Supplemented By Brief Comments on Building and Planting Walls

Wall plantings are a form of horticultural endeavor that has not yet achieved the popularity that is warranted by the pleasure that it can provide. There are many retaining walls in various situations that could be made marvelously beautiful in the garden setting if their faces were clothed by the foliage and blooms of some of the small hardy alpines that thrive in warm sunny exposures and are satisfied with a little soil. Wall gardens have an especially fitting place where there are changes in grade level and a sod terrace would be difficult to maintain.

Proper Drainage.

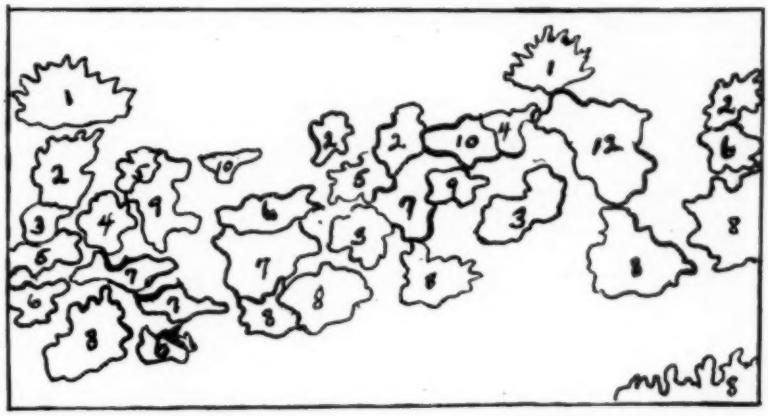
Use of a wall that is standing requires care in inserting the plants. Naturally, it is also essential that the construction permits the proper drainage; that is, that there is a downward slope to the rocks and crevices. The walls may be nearly perpendicular; setting them back one foot horizontally for each ten feet vertically is sufficient.

The ideal method is to insert the plants as the wall is being built. This is not always practical, however, as the complete list of plant materials is seldom ready at one time, and one will always wish to make additions.

Construction.

In starting a new wall to hold plants, lay the bottom row of stones on a slant, with the back end below ground level. Successive stones should follow the same direction, until the top row is reached, where the slabs can be laid horizontal. The practice is to use small chips and stones at the back of the wall as it goes up, as the plant roots like to grow into such a medium.

It is not necessary to have regularly cut slabs to make a wall; irregular pieces can be used with equally good effect. In the illustration on this page, showing a detail of a planting by T. W. Brickman, landscape designer of Chicago, on the Horticultural building grounds at Chicago's world's fair, limestone slabs are shown in the wall. A different type, requiring a special list of plants also, would be a granite boulder wall. In any case, the planting should be done so as to leave areas of the wall exposed, to make a background for the plant subjects.



Key to Wall Planting Reproduced with Accompanying Article.

1. Dianthus caesius 2. Sedum Ellacombianum 3. Tunica saxifraga 4. Sedum stoloniferum 5. Ajuga genevensis 6. Sedum acre 7. Sedum sarmentosum 8. Sedum spectabilis 9. Thymus lanuginosus 10. Thymus serphyllum coccineum 11. Nepeta Mussini

Planting.

The tufted and drooping plants are especially suitable for wall planting. Allow room for them to develop when inserting them in the wall. Over a comparatively small expanse, it is recommended to plant comparatively few varieties, in groups. Consideration of foliage textures will add interest to the effect.

A trailing variety can be used to advantage over the top edge. For this Campanula garganica is excellent. Back from the edge of the wall at the top more erect-growing subjects are desirable. At the base of the wall, too, one has the opportunity to plant some of the slightly larger items, such as Sedum spectabilis, as shown in the illustration, for which a key is also reproduced on this page.

When placing the plants in position, spread the roots in the soil pocket. Also, it is good to put a small stone under the crown of the plant to guarantee drainage about this point. Stone particles, leaf mold and sand compose

Detail of Wall Planting Taken in World's Fair Garden Installed by Brickman at Horticultural Building Grounds.

the soil mixture that is best for most of the varieties.

Recommended Plants.

Following is a list of desirable plants for the limestone wall garden, extensive, but still not exhaustive:

Acæna microphylla inermis (Trailing, flowers indistinct)
Acæna Sanguisorbæ (Half hardy)
Achillea tomentosa
Æthionema
Ajuga genevensis
Alyssum argenteum
Alyssum saxatile
Alyssum serpyllifolium
†Androsace
Arabis albida
Arabis alpina
Arabis Kellereri
Arabis Sturii
Arenaria grandiflora
Arenaria montana
Arenaria verna
Armeria cæspitosa
Armeria alpina
Armeria Laucheana
*Artemisia frigida
Aubrietia græca
Aubrietia hybrids—Dr. Mules, violet purple; Mrs. Lloyd Edwards, brilliant purple. (Use with Alyssum saxatile and Arabis alpina. Hot dry location at top of wall.)
Bellis rotundifolia cærulescens
Bellium minutum
†Calamintha alpina
Campanula fenestrellata
Campanula Erinus
Campanula garganica
Campanula garganica hirsuta
Campanula muralis
Campanula pusilla
Campanula pusilla alba
Cerastium alpinum lonatum (glacialis)
†Cerastium tomentosum
*Cheiranthus linifolius
Coronilla iberica
Corydalis lutea
Draba aizoides
Draba Aizoon
Draba Dedeana
Dianthus arvernensis
Dianthus neglectus
Dianthus neglectus var. Roysii
*Dianthus plumarius
Erigeron mucronatus (Vittadinia triloba)
Erysimum pulchellum
Globularia cordifolia
Globularia trichosantha
Gypsophila repens
Herniaria glabra
Iberis sempervirens
Leontopodium alpinum
Lewisia Howellii
Linaria alpina
Linaria origanifolia
†Mazus reptans
Myosotis palustris
Nepeta Mussini
Nierembergia rivularis
Pentstemon Menziesii
Phlox subulata
Phlox subulata Vivid
Ramondia pyrenaica (North exposure)
†Saponaria ocymoides
Saxifraga Aizoon
Saxifraga decipiens
Saxifraga Maonabiana
†Sedum album
Sedum glaucum
Sedum Maximowiczii
Sedum middendorffianum
Sedum spurium rubrum
Silene alpestris
Silene Schafta
Thymus azoricus
Thymus citriodorus
Thymus lanuginosus
Thymus nitidus
Thymus Serpyllum albus
Thymus Serpyllum coccineus
Tunica saxifraga
Tunica saxifraga rosea
Veronica corymbosa stricta
Veronica prostrata
Veronica rupestris
Viola gracilis
Viola, hybrids of cornuta

*Erect-growing species, good at top of wall.

†Desirable to grow over top edge of wall.

LOSE A PEN?

Charles Sizemore, secretary of the American Association of Nurserymen, found a valuable fountain pen on the secretary's desk at the recent A. A. N. convention at New York which he will return to the owner if the owner will notify him at his office at Louisiana, Mo.

Narrow Upright Trees

L. C. Chadwick Lists Variety of Trees That Fit Common Need in Plantings

In nearly every landscape planting there is need of one or more narrow upright trees. Usually because of their form and position they are among the most prominent plants in the entire planting. Yet until recently the choice would have been some populus, a relatively rapid-growing but a short-lived species. Such a choice was due no doubt to the relatively few available upright trees. During recent years, however, the pyramidal English oak, pyramidal hornbeam, sentry maple and others have fortunately been used to a greater extent.

If one reviews the literature, it is astonishing the wealth of narrow upright material that has been named. The great majority of these plants should find their way into the trade. The old familiar Lombardy poplar may have had its place as a narrow type which will develop rapidly, but since narrow upright trees are planted for permanence as well as rapidity of growth, it is not satisfactory. The Bolleana and narrow Simon poplars are seldom more satisfactory than the Lombardy. The Moline elm, sentry maple and pyramid tulip tree are possible rapid-growing types of more durability which may be substituted for the poplars.

Various Habits.

Narrow upright trees of various habits exist, as can be seen by glancing at the accompanying list. For a dense habit of growth few can surpass the pyramidal English oak, pyramidal hornbeam and the Wheatley elm. A slender branched airy type is Cercidiphyllum japonicum. While varying a great deal in habit, the Katsura-tree is narrow and upright enough to plant where limited space is available. A type which is usually narrow upright when young but becoming more widespreading with age is Magnolia acuminata, the cucumber tree. Where a large tree is desired this magnolia will satisfy. Of unusual appearance is the upright form of the maidenhair tree, Ginkgo biloba fastigiata. The sparse and irregular branching habit and fan-shaped foliage always attract attention. Few trees are as free from pests as the ginkgo. Because of this it should be planted more frequently, both in its narrow upright and widespreading forms.

It is not necessary to discuss each individual type in the accompanying list, since their characteristics, except form, are essentially the same as the species of the plant mentioned. Everyone is acquainted with the sturdiness of the oaks, elms and hard maples. The upright types are not exceptions to this characteristic. The accompanying list does not intend to include all the known narrow upright deciduous types. It includes some which, no doubt, are not available outside of arboretums, but which should be grown by nurserymen. It includes some types, like the pyramidal English oak, sentry maple and some of the elms, which, though now quite common in the trade, are well worth growing. It includes some common types, like the Lombardy poplar, which should be replaced by more durable types in most instances. It does not include a number of other narrow pyramidal forms of populus, ulmus, prunus and other genera. While rare, some of these may be as good as those listed. No attempt has been made to include upright forms of small trees like crataegus, caragana and evonymus.

NARROW UPRIGHT TREES.

Acer dasycarpum pyramidale, pyramidal silver maple.
Acer platanoides columnare, column maple.
Acer rubrum columnare.
Acer saccharum monumentale, sentry maple.
Æsculus Hippocastanum pyramidalis, pyramid horse chestnu..
Alnus glutinosa pyramidalis.
Betula alba fastigiata, pyramidal white birch.
Carpinus betulus columnaris.
Carpinus betulus pyramidalis (fastigiata), pyramidal hornbeam.
Cercidiphyllum japonicum, Katsura-tree.
Fagus sylvatica fastigiata.
Ginkgo biloba fastigiata.
Liriodendron Tulipifera pyramidale, pyramid tulip tree.
Magnolia acuminata, cucumber tree.
Populus Bolleana, Bolleana poplar.
Populus nigra italica, Lombardy poplar.
Populus Simonii fastigiata, narrow Simon poplar.
Pyrus communis, common pear.
Quercus robur fastigiata, pyramidal English oak.
Sophora japonica columnaris.
Tilia cordata pyramidalis.
Tilia platyphyllos pyramidalis, pyramidal European linden.
Ulmus americana Littlefordii, Littleford elm.
Ulmus americana Moline, Moline elm.
Ulmus campestris Wheatleyi, Wheatley elm.
Ulmus foliacea stricta, Cornish elm.
Ulmus glabra fastigiata, Exeter elm.

SOW BUGS IN FRAMES.

Ordinarily, sow bugs can be controlled by the use of poison bait or by trapping. The latter practice, however, is not practical in propagating frames. Poison bran mash may be bought as a commercial product or made by mixing one pound of white arsenic with twenty-five pounds of bran and then adding about two quarts of molasses. The mash should be scattered about the infested areas. Commercial products, such as Vaporite, To-Na-Cide and Santochlor, especially the last-named, have given good control. All these materials have a deterrent quality, but the percentage of kill varies somewhat. L. C. C.

ARTHUR ORIN, formerly manager of the Edward H. Rust Nurseries and more recently in a partnership business at South Pasadena, Cal., became general manager of the Del Amo Nursery, near Compton, Cal., August 1.

News of the Trade Associations

TWIN CITY NURSERYMEN MEET.

The Twin City Nurserymen's Association held a picnic July 18 at the Bailey Nurseries, near Newport, Minn. Though the day was hot, a cooling breeze blew on the spacious residence grounds of Mr. Bailey, and the visitors had an enjoyable time. The raspberry crop was at its height, and Mr. Bailey furnished raspberries and cream, in addition to several other items of food and drink.

The next meeting of the Twin City Nurserymen's Association in all probability will be held on the second Wednesday in November, at some hotel in St. Paul, to be designated later by the secretary, E. E. Johnson, Rose Hill Nursery, Como station, St. Paul.

SOUTHWESTERN ACTIVITIES.

The early part of July a meeting of the Southwestern Association of Nurserymen was held at Fort Worth, Tex., at which about sixty persons were present to hear and discuss a report on a Washington hearing of the national planning committee. As a result, members who proposed to attend the national convention in New York were instructed to favor minimum prices rather than open prices for the southwestern territory. Plans were made for another meeting in August, either at Fort Worth or Dallas.

Lela W. Foster, secretary of the Southwestern Association of Nurserymen, addressed the Agricultural Writers of Texas at their annual conference, held at the Texas A. & M. College, College Station, Tex., July 30 to August 2. She spoke on "Tree Shadows," the association's publication.

VIRGINIA PROGRAM.

The annual convention of the Virginia Nurserymen's Association will be held at Luray, Va., Monday and Tuesday, August 13 and 14. Headquarters will be at the Mimslyn hotel.

President E. M. Quillen is in charge of arranging the program. Most of the time at the meeting will be devoted to discussions of present problems that are of pressing importance to nurserymen.

H. G. Neale, landscape engineer of the Virginia highway department, will conduct a round-table discussion on "Roadside Improvement." R. E. Burson, director of parks, will conduct a discussion on "State Parks." Dr. J. Horace McFarland, Harrisburg, Pa., will make an informal talk on "Merchandising Plant Material." Fred Shoosmith, of the Southside Nurseries, Richmond, will conduct a round-table discussion on "How to Meet Competition in the Nursery Business."

Owen G. Wood, chairman of the executive committee and past chairman of the Southern Nurserymen's Association, will make a full report on matters occurring at the meeting of the American Association of Nurserymen in New York that are of particular interest to nurserymen in Virginia at this time.

A banquet will be held at the Mimslyn hotel on the evening of August 13. One of the entertainment features arranged for the convention is a drive over the skyline route at Luray.

W. N. Roper, Sec'y.

COLUMBUS LANDSCAPE GROUP.

The Columbus Landscape Association, which meets on the second Tuesday of each month, will hear at the August meeting, at Columbus, O., a talk by the president, L. C. Chadwick, on his recent trip in the east, on which he attended the A. A. N. convention and visited a number of nurseries. Plans will be made at the same meeting to visit estates and nurseries about Cleveland.

At the July meeting the association met with Dr. McClure, of the soils department of Ohio State University, and visited his lawn plots growing on the university farm.

The officers of the association, elected at the annual meeting in January, are: President, L. C. Chadwick; vice-president, Star Windsor; secretary, Howard Warwick, and treasurer, C. Bret Slemmons.

OKLAHOMA MEETING CANCELLED.

At a meeting of the executive board at Oklahoma City, July 12, it was decided to cancel the summer meeting of the Oklahoma State Nurserymen's Association this year. It is understood, however, that this action is only temporary and does not affect the future program of the association.

The officers of the Oklahoma State Nurserymen's Association are: President, C. E. Garee, Noble; vice-president, A. W. Kenyon, Oklahoma City; secretary-treasurer, Mrs. Jim Parker, Tecumseh. The executive committee is composed of J. F. Semtner, N. D. Woods, V. E. Bryan, C. Y. Higdon and Leo Conard.

The farmers' short course held at A. & M. College, Stillwater, July 25 to 27, included one day of sessions of the state horticultural society, attended by several nurserymen of the state. Jim Parker, Tecumseh, is president of the state horticultural society.

DROUGHT DAMAGE IN NEBRASKA.

The season has been exceptionally unfavorable for the trade throughout Nebraska. In the vicinity of Lincoln, there have been only seven and three-quarters inches of rain since September, 1933, twenty-five inches being really needed. During this drought period there have been temperatures reaching 116 degrees, with many successive days over 100 degrees. As a result, most of the spring lining-out stock is gone, and there is little growth on the older plants. Many shade trees have been killed and lawns burned. The condition is unprecedented.

Evergreens, in particular, have suffered from burning. Black Hills spruce, ordinarily considered one of the most satisfactory evergreens in the region, was injured in about the same ratio that Spiræa Vanhouttei was in relation to other shrubs. Colorado spruce withstood burning better, but was not completely unharmed. Concolor firs, Douglas spruces, Mugho pines and some of the prostrate junipers suffered in varying degrees at different nurseries. Almost universally there was no damage to the Austrian and bull pines, the cedars and Pfitzer and Savin junipers.

Members of the Nebraska Nurserymen's Association are anticipating with interest the annual field day, which will be held at Smiley's Water Gardens, Beaver Crossing, Neb., about September 12. The site, which is a water lily and goldfish farm, has flowing Artesian wells and is one of the few green spots in Nebraska at this time, according to Ernst Herminghaus, Lincoln, secretary of the association.

The landscaping of the new state capitol grounds, at Lincoln, has been of general interest to the trade. The work was accomplished at a cost of about $15,000. Three firms participated in the planting, Marshall's Nurseries, Arlington; Byrd Nurseries, Williams, and Nebraska Nurseries, Lincoln. Ernst Herminghaus was the landscape architect and was also in charge of maintenance. Replacement guarantees extend to April 1, 1935, and strenuous efforts are being made to keep things in proper condition. Twelve men are working on the eight acres of ground and a battery of thirty sprinklers is in use. Planting was done in the early winter, the materials including about 163 large trees, among them evergreens fifteen to twenty feet tall. There were forty-four concolor firs, sixteen to twenty-one feet tall. Only one 16-foot cedar has been lost, despite the adverse weather.

Secretaries or other officers of trade organizations are invited to send in news regarding current activities and coming events for publication on this page—a means not only of informing the trade at large but also of enlisting the interest of prospective members.

TENNESSEE OUTLOOK.

Nursery inspections are now being made in all parts of Tennessee. Last year the following inspections were made: Nurseries growing deciduous, fruiting and ornamental trees, shrubs, etc., 256; establishments handling collected mountain shrubs, 55, and greenhouses, 94.

According to G. M. Bentley, Knoxville, secretary-treasurer of the Tennessee State Nurserymen's Association, nursery sales last fall and spring showed a decided improvement. There is also an appreciable increase in nursery acreage this year. Stock is growing well, and the prospects are encouraging for the fall.

Present officers of the state association, which has been active since 1905, are: President, E. E. Chattin, Winchester; vice-president, R. H. Jones, Nashville; secretary-treasurer, G. M. Bentley, Knoxville. The present membership of the group is about 200. Besides an annual meeting, a summer session is usually scheduled by the association.

Plantings at World's Fair

Detailed Description of Individual Firms' Work

The gardens and other exhibits planted by nurserymen at the 1934 world's fair at Chicago are of such extent and interest as to merit more than the brief mention which has appeared in the general articles in previous issues of this magazine. So it is planned to present in each issue a fuller account of each nurseryman's work. One of these important horticultural features of the fair is described on this page.

A rare opportunity for rose enthusiasts to compare varieties and examine scores of recent introductions is provided by the ¾-acre planting devoted exclusively to the queen of flowers on the grounds of the Horticultural building at A Century of Progress in Chicago. The display is repeated from last year, with additions, by the Inter-State Nurseries, Hamburg, Ia., rose specialists.

The roses occupy a space at one end of the grounds and are laid out in four large formal gardens and several borders in front of a summerhouse and pools. Red roses are grouped in one section, yellow in another and pink in a third, while a fourth shows a mixture. Flagstone paths extend along the various beds, and each variety is clearly labeled.

The gardens were designed for the Inter-State Nurseries by Charles N. Evans, Wilmette, Ill., who directs the maintenance, also. The several large individual sections are highly attractive; the accompanying illustration clearly shows the red division in the foreground, this being the largest section, with an old wellhead at the center of one end part and a bird bath in the grassy expanse separating the rectangular beds.

There are about 16,000 rose plants in the complete planting, about 300 separate varieties being represented. These include 250 tree roses, 200 climbers, 6,000 polyantha type, 9,000 hybrid teas, 400 rugosas and 100 hybrid perpetuals. The soil was built up on sand, first by providing a thin layer of clay, next by applying about 5,500 cubic yards of black dirt and lastly by giving a light top-dressing of peat.

One cannot, of course, base a final judgment of a variety upon its appearance in the gardens, because its performance is likely to vary in different localities and may change during the summer. It is interesting, however, to look over the varieties and pick out the outstanding ones. Brief mention of some of the roses that were giving a good account of themselves at the end of June follow:

In red, Mme. Henri Lustre is noteworthy. Charles K. Douglas is a splendid crimson, reported fine for bedding or cutting, being a good bloomer and grower. Sensation, another crimson, is showing freedom of flower production, while growing strong. Margaret McGredy, brick red, promises to be one of the best bloomers in the entire planting. Cuba, red orange, is a topnotcher Hortulanus Budde, a semidouble crimson, is another fine one. Better Times is likely to lead the entire red list.

In the pink varieties, one cannot overlook Mrs. Henry Morse and Mrs. Henry Bowles. Mrs. A. B. Barraclough is also doing well. Leonard Barron, pale pink here, has fine growth and blooms to commend it. J. Otto Thielow, introduced in 1927, makes a splendid appearance. Betty Uprichard, coppery pink, makes a good showing here both in flowers and growth. Rose Marie also wins attention. Pink Pearl seems a fine outdoor variety of Columbia type. Radiance, of course, is good.

As a yellow, Amelia Earhart is doing well. Mrs. Pierre S. du Pont is the leader in the class for blooming, however, rivaling Margaret McGredy in this respect. Sœur Theresa seems to be excelling itself. Mrs. Beattie appears to be an excellent lemon yellow. Mrs. E. P. Thom and Souvenir are also commendable here. Doris Traylor, said to need shade to hold its color, is an attractive orange yellow. Lady Forteviot, saffron yellow, is a leader in its shade.

President Herbert Hoover, Feu Joseph Looymans, Token, Dame Edith Helen, Mrs. L. B. Coddington and Vivid appear to advantage. Condessa de Sastago, similar to Talisman, shows stronger necks than the latter and several buds to a stem.

Countess Vandal, a new variety on which the Jackson & Perkins Co. holds a patent, has consistently held an outstanding position.

Mme. Jules Bouché makes a claim to being the best blooming white. Caledonia is a rival. Innocence, a single white, draws attention, and Isobel, a red orange single, cannot be passed by without notice.

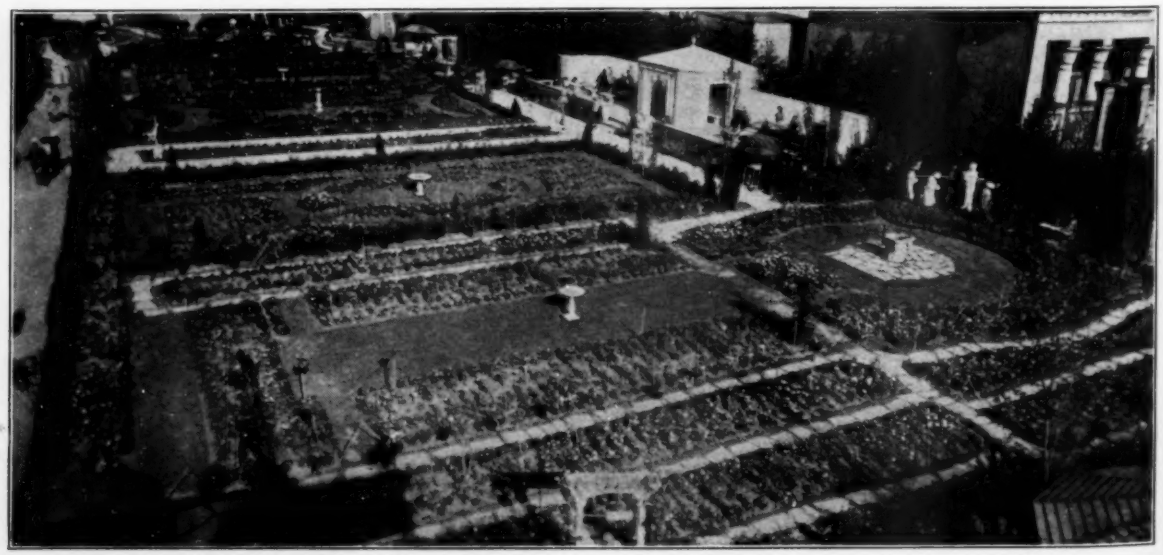
Gruss an Teplitz makes a showing difficult to excel here. Birdie Blye, a pink multiflora, also does well. Of the tall polyantha group, Else Poulsen, pink, and Permanent Wave, a new red, seem to be almost perfection. Among the rugosas, Berger's Erfolg, a single, is the outstanding crimson, while Blanc Double de Coubert is a good white.

In the dwarf polyantha group, Ideal, dark red; Katherina Zeimet, white; Golden Salmon Supreme, salmon, and Chatillon, pink, are the leaders. They are used as border plants in many beds.

Blaze, the new climber, completed a wonderful blooming period at the end of June; it will be watched further. Mercedes Gallard, crimson, another new climber, is also being observed closely, as it is displaying some fine qualities. Small plants of Nigrette, the "black" rose, have still to bloom, but inquiry about the variety indicates considerable interest.

Sir Henry Seagrave, lemon yellow, is a new variety that Mr. Evans believes holds great promise. Portadown Bedder, cerise orange, also indicates excellence, according to Mr. Evans.

The Inter-State Nurseries are oper-



Group of Rose Plantings by Inter-State Nurseries That Cover Large Area at A Century of Progress in Chicago.

ated by L. R., Carl and David Sjulin. Ernest Balco, business manager, is a consultant at the fair display. Over 500 acres are included in the several rose farms maintained at Hamburg by the firm, which has been in business about fifteen years. A large mail-order trade, to which a half-million catalogues are annually distributed, is carried on. The radio is also used extensively for publicity work.

Coöperating with the Inter-State Nurseries in making the display are the following firms, which supplied equipment and other materials: Architectural Decorating Co., Chicago, which furnished a summerhouse, pools and fountain figures; Swift & Co., who supplied fertilizer; the Rose Mfg. Co., Philadelphia, maker of Tri-ogen spray; H. D. Hudson Co., Chicago, maker of spraying equipment, and the S-W Supply Co., Girard, Kan., manufacturer of garden markers.

BRAND CANKER OF ROSE.

In the summer of 1926 a severe epiphytotic of the disease known as brand canker occurred in the rose garden of the department of floriculture and ornamental horticulture at Cornell University, Ithaca, N. Y. Brand canker had been diagnosed for the first time in America in 1924, although subsequently it was found to have been present earlier. Its reported occurrence in 1926 in a serious outbreak excited much interest. On June 23 of that year, a brief history and description of the disease appeared in the official record of the United States Department of Agriculture. A preliminary study of the disease as it occurred at Ithaca was made. Later, when, in spite of drastic control measures, brand canker continued to be a serious menace in the university garden, a more thorough inquiry into its life history and control seemed desirable. Accordingly, investigation was begun in September, 1927, and is now reported in memoir 153 of the agricultural experiment station at Cornell University, prepared by Cynthia Westcott.

This pamphlet brings together the results of four years of investigations on the brand canker of rose. Much of the work centered around the disease as it occurred in a single, but rather extensive, rose garden at Ithaca.

No difference in varietal susceptibility has been found among the climbing roses in the Ithaca garden. Although some hybrid teas have proved susceptible on inoculation, such roses have remained free from natural infection.

The symptoms of brand canker and stem canker of rose, which have been confused in literature, are presented, and distinguishing characteristics are given. The brand-canker fungus, Coniothyrium wernsdorffiæ Laubert, has larger spores and pyenidia than those of C. fuckelii Sacc., which causes stem canker. The difference in spore measurements of the two fungi has been treated statistically and found to be significant. C. wernsdorffiæ has lower optimum and maximum temperatures for growth than has C. fuckelii and grows more slowly.

Wounds made by thorns, leaf scars, tree-hopper incisions, injury by mice, and abrasions of various sorts serve as infection courts for the brand-canker fungus. Infection usually occurs in the late winter or early spring, during the period when the rose canes are protected with earth at the base. Infections are few or entirely wanting when the roses are left uncovered. There is no infection in summer.

No control has been obtained by spraying or dusting with fungicides during the growing season, or by applying lime-sulphur as a dormant spray late in the fall. The removal of diseased canes is an aid in eradicating the fungus, but it must be thoroughly done to be effective.

Brand canker may be almost entirely controlled by leaving the roses uncovered during the winter. Observations through two years show no correlation between nonprotection and poor overwintering, with the great majority of the varieties so treated. Seventy-six varieties of roses are listed to indicate their condition in the spring in relation to winter protection.

BUSINESS EMBARRASSMENTS.

Rutherford, N. J.—As receivers for the business of L. C. Bobbink, who conducts the establishment known as Bobbink & Atkins, the United States District court at Newark July 30 appointed C. A. Van Winkle, of the Rutherford Trust Co., Rutherford; J. Horace McFarland, Harrisburg, Pa., and George C. White, of the Bobbink & Atkins organization, Rutherford. The action was a result of a petition made by Mr. Bobbink under the new bankruptcy law for an extension of time to pay all claims in full. A committee representing creditors who hold ninety per cent of the indebtedness, exclusive of real estate mortgages, agreed upon the course to be pursued so that the business may be continued and eventual payment made to all creditors.

The Current Season

W. N. Craig's Notes from New England

KEEP DOWN THE WEEDS.

July, 1934, will surely be remembered for its warmth and drought. With a scant half-inch of precipitation in New England, crops are beginning to show signs of distress, especially on light soils. It has been a fine season for weed killing, and there can be no excuse for any nurseries being overrun with weeds. Too many growers of nursery stock seem content practically to ignore all necessary weeding and cultivation during the busy selling season and to allow their nurseries to get into a rather deplorable condition. We all want to keep labor costs down as much as we can, but does it really pay to allow plantings of trees, shrubs and perennials to resemble a hayfield and then gradually tackle it as the selling season wanes? What customers can possibly be attracted by weedy, untidy conditions? Weeds exact a heavy toll in food the cultivated plants need. A clean, well kept establishment looks inviting and attracts buyers, just as an untidy one repels them, yet there are today far too many in the latter class and their owners wonder why they are not better patronized.

PROPAGATING ROCK PLANTS.

Apart from the growing of rock plants from seeds, it is possible at this season to divide a number of varieties of the smaller-growing section, and while, because of the long periods of hot dry weather, there are risks in making these plantings outdoors unless where they can be watered for a time, there are various dianthuses, arenarias, violas, cerastiums like tomentosum, thymes, gentians, drabas, veronicas and others which can be broken up into small pieces, potted into 2¼-inch pots and placed either in a greenhouse or a coldframe where sash is shaded which will soon become established and make salable plants for fall. These may be carried over winter in a frame or planted outdoors if preferred when established.

It is well to carry a good number and variety in pots to interest the rapidly growing army of rock plant enthusiasts. A few of the smaller and finer varieties of sedums, sempervivums and saxifragas are adaptable for house culture and some should always be carried in pots.

HYBRID HEMEROCALLIS.

What grand additions are the hybrid day lilies evolved by that painstaking hybridist, Carl Betscher. His energies are not being entirely devoted to the genus hemerocallis, as he is working on roses, lilies and other hardy subjects with considerable success. These hybrids bloom through the last half of July and much of August. Of course, the price asked must be materially higher than for such kinds as flava, Thunbergii, middendorfii, gracilis, Dr. Regel, luteola and others, but they are worth the difference.

As soon as the flowering season ends is the time to lift and carefully divide them. Such lovely varieties, already fairly well known, as Cressida, Lemona, J. A. Crawford, Bay State, James R. Mann, Harvest Moon, The Gem, Anna Betscher, D. D. Wyman and others, will give tone to any collection of perennials. Mr. Betscher states that he has other hybrids coming along beating any now in the trade. At the botanical gardens at Bronx park, New York, Dr. A. B. Stout has raised a fine lot of hybrids, some of unusual colors, including pink. Last summer I saw fine collections in England from Amos Perry and Yeld. Some of these are now being offered in America, but the prices are still high.

Good points about the hemerocallis are that it is absolutely hardy, carries green foliage over a long season, is readily increased, comes in a fine range of colors and the blooming season spreads over a period of fully three months.

PLANTING IRISES.

Of course, September is a good time for dividing and replanting irises, but late July and early August is even better. In fact, as soon as the flowering season has passed is a first-class time to do this work. If the weather is at all dry, dip the divisions in a puddle of loam, old manure and soil watered to the consistency of good Scotch porridge. This is much better than watering them, and failures will be few. Dividing thus early, you have in mind the heights and colors of the plants, and you should have been able to label any not true to color.

There is a steadily growing interest in the Japanese irises, with the popularity of the 3-petaled and 6-petaled varieties pretty evenly divided. Personally, I like the varieties with three petals and think they have more charm than the so-called doubles.

While it is true the Kaempferi sorts should be kept moist until after blooming, it is really surprising how well they do with only sky watering if they are kept well cultivated. The Siberian varieties are fine on the margins of streams, and in such a position varieties like Snow Queen, Emperor and Perry's Blue grow amazingly. These will stand more moisture in winter than the Japanese section, but on quite dry land they do well.

The bearded section, which blooms first, would be better all divided and replanted ere this time, and where this has been done there will be an appreciable difference in the flower production next season. Dwarf varieties, like cristata, pumila and gracilipes, if not yet divided, should be replanted soon. The last-named variety was unharmed by the past severe winter and should, therefore, be classed as really hardy.

Species, like chrysographes, Wilsonii longipetala and tectorum, are all in increased favor, and any dividing is best done early. Very late flowering is the charming dichotoma, not opening until late July. The pale blue flowers do not open until 2:30 p. m.; the blooms are not large, but a great number are open at one time, and a spray is lovely. The flowers closely resemble in form those of the blackberry lily, Belamcanda chinensis, and the habit of the plant is similar and the flowering time the same.

It is surprising that one rarely sees any of the charming bulbous irises in any nursery. Of course, the popular impression is that they are tender, which is utterly wrong. Give them "dry feet" in winter, and there will be no trouble with them. Even Wedgwood and Imperator are just as hardy as the bearded and Siberian varieties. The Dutch types come in a little ahead of the older Spanish sorts, while the English varieties come last of all. Late October is ample time to plant these, and bulbs should be covered not over four inches. The bulbous irises come in season just after the bearded section. Their deep and pale blues, yellows, bronzes and pure whites, on 24-inch stems, really surpass in beauty any other varieties of the great iris family. Incidentally, the earliest-flowering bulbous variety is reticulata, blooming early in April. There is also a Cambridge blue form named Cantab, which opens a full week ahead of reticulata itself. These are perfectly hardy, also.

Herbaceous Perennials

Comments on Less Common Varieties

GAILLARDIAS.

To the commercial plant grower, the old-time forms of the perennial gaillardia hold little promise. They are so easily propagated, are so persistent and have been so overproduced that there remains little inducement in them for the grower who expects even common wages for his work. Fortunately, though, the scene changes when we get to the modern forms which plant breeders have given us during the past few years. But to get the cream of this business, one should get into it right now, for profits will dwindle rapidly as stocks increase.

For the benefit of those who are new to the fascinating game of plant propagation, it may be well to say a few words on that score. Gaillardias are propagated by seedage, division and cuttage. The first of these is of little use in the case of named varieties, such as Lady Rolleston, Mr. Sherbrook, etc., because they do not come true from seeds. Division of the clumps is an easy method to secure increase, though it is too slow for the commercial grower. This leaves us cuttage, which may be accomplished in two ways—by stem cuttings and by root cuttings. Stem cuttings are probably best made in late summer and handled in a shaded frame. Cuttings pulled off with a heel will root quickly, though a heel is not necessary. Root cuttings are best made in early spring before much active growth has started. Use short pieces of the fleshy roots, say two inches long, and handle them in much the same way as has been outlined in these pages for hardy phloxes, centaureas, etc.

Probably the variety with greatest promise as a money-maker right now is Sun God. It may be no better than one or two others that have been on the market for some time, but it is getting a lot of publicity in amateur horticultural publications and will naturally get the call. I have not seen the plant, so cannot give a personal opinion, though its printed notices read like the descriptions of a well grown Lady Rolleston. Sun God is said to produce pure yellow flowers four inches across on strong stems two feet high. When I tested Lady Rolleston a few years ago, that feat could be duplicated under high culture. I saw another good yellow last fall that was labeled Mr. Sherbrook. It was somewhat on the order of Lady Rolleston, though the petalage was fuller and the color a deep gold instead of the soft shade of the latter. Golden Gleam is an older pure yellow that has not made the headway its good qualities warrant.

Of the 2-color forms, Portola is the best one in American trade that I have seen, though much is expected of the true Ipswich Beauty. Portola carries immense flowers, with an abundance of broad ray petals, bright crimson, tipped yellow. It may be well to note that much of the material which travels under the name of Portola has been grown from seed and shows little of the beauty of the true plant.

CAMPANULA ROTUNDIFOLIA.

Campanula rotundifolia is a highly polymorphic species, running into so many forms it is little wonder that few of us can tell where the species leaves off and another one starts. Even the botanists are not entirely in accord on the question. It would be folly, then, for a mere gardener to enter so confused a field, yet there are a few observations on the garden uses of some of the rotundifolia forms which may be of use.

First is the question of soil. Type rotundifolia and most of its forms will accommodate themselves to almost any soil that is well drained, so we can manipulate them in our gardens as we desire. Consequently, if we want a dwarf growth, we give the plant an extremely lean soil (I have a few plants in pure lake sand that are in perfect health, though they do not get higher than four inches); if lush growth is desired, plants grown in leaf mold and shade may become more than two feet high. There are numerous gradations between the two heights which one may approximate by means of soil and exposure. There are, however, forms in nature which keep fairly

constant to their natural stature, especially in the first generation in the garden. The latter brings us to the factor of retrogression, which all observant gardeners must have noticed.

A noticeable example of retrogression under garden culture is C. Scheuchzeri. This plant was set aside as a true species by Villars, a French botanist, on a few minor technical points, such as the stem leaves of C. rotundifolia being entire, while those of C. Scheuchzeri are distinctly serrate, and the flower buds of the former are erect, but not in the latter. All of these differentiating characteristics tend to disappear after two or three generations are grown from seeds under garden conditions and all one has left is rotundifolia under various guises. That has been the procedure in my own case, at least, and I suspect it holds good in other gardens. Whether or not the retrogression is caused by type C. rotundifolia's growing in close proximity I am not prepared to say, though, if it is, it would indicate a closer relationship than the specific status given the two plants by botanists would indicate. I have made it a point to look into cultivated material upon which Villars based the species and think it is safe to say that not one per cent of the plants in American gardens is anything else but rotundifolia. Incidentally, C. linifolia, as it is grown in gardens, is not the same as C. Scheuchzeri, but is rather indistinguishable from rotundifolia.

In addition to C. linifolia, there are a number of forms, often given the dignity of a specific name by catalogue makers, which may be assigned to the two species we have been discussing, or probably the entire lot may be thrown into C. rotundifolia. These include the following: Baumgartenii; lapponica; carnica, of trade lists, which is not the true thing at all; Marchesettii, alaskana, arctica, valdensis, velutina, Hostii and others.

These are all interesting, but most of them are of more value to the student than to the gardener. Some of them are distinguished mostly on variations in their calyx lobes, a matter which is of little concern to the garden maker. A few, however, such as C. alaskana in its first generation in the garden and C. Hostii, if one is fortunate enough to get the true plant, are distinct enough to deserve attention. The first of these two is a dwarfer plant than C. rotundifolia, as we find it in the United States, though its leafiness of stem detracts somewhat from the grace of the type. C. Hostii, as I had it from England a number of years ago, was a better garden plant than C. rotundifolia as it usually grows, first, because of the former's stouter stems and again because of its larger bells.

Most of the C. rotundifolia varieties that I have collected during a lifetime of interest in the species have become amalgamated in a new series of garden forms. And the passing of most of them was the occasion for little mourning on my part. Even the variety C. soldanellæflora was a disappointment so far as garden effect was concerned, and it left no visible impress on the succeeding generations of garden seedlings. It is my opinion, though, that the species holds vast possibilities in the hands of the plant breeder. Even the small amount of time that I have been able to give to the work has produced a number of promising forms, including one with upturned flat saucers, something on the order of C. Laurii, though the stems are not floppy as in that species and the plant is ironclad hardy, something that cannot be said of C. Laurii. Another interesting one, a cross between C. rotundifolia and C. pusilla, has given a plant which almost duplicates the C. stenocodon of botanists. The last-named plant seems to be a rarity, for one never sees it in plant lists and the seeds that I have had under that name never produce a plant that even approaches its technical description.

C. rotundifolia in its various forms is, or should be, one of our most important rock plants. It is one of the easiest of campanulas to grow and has as long a blooming season as can be expected of any plant. It is as easy to grow from seeds as any small-seeded plant and may be increased from cuttings. Different growers have different methods for the latter process; personally, I like to pull the clumps apart just as new growth starts in early spring, rooting the pieces that have been pulled away with a heel of the old root.

DIANTHUS CALLIZONUS.

The longer one gardens, the less sure one is likely to be on any controversial point. And the more experience one has accumulated, the less cocksure one will be about any garden matter. Twenty years ago I could have said that Dianthus callizonus wants this and this, but will not stand for that and that; today I am ready to admit that I do not know what it wants. When it does get what it wants, is there any lovelier flower in the whole world? First of all, it is capricious, and like most capricious persons, the more attention it gets the more wayward it is. I have in the past cosseted it with about every device known to the gardener, giving it first peat and then lime, sun and shade, moist and dry situations, only to have it bundle up its belongings and steal away in the night.

My present small stock of plants is the result of a packet of seeds sent from Europe by a friend and has had no more care than the ordinary plant grown in an ordinary outdoor frame, and the result has been the healthiest most vigorous growth I have ever seen on D. callizonus and a period of blooming this year which exceeded anything I had ever hoped to see in this life. This experience has been set down here with the hope that it may contain something helpful to others who have been struggling with this incomparably lovely pink. If my experience with this variety means anything at all, it is probably to be found in the fact that the plants enjoy neglect in everything except in the matter of moisture. In any event, the only attention they have ever had is overhead irrigation every other day during periods of dry weather.

A few words as to what D. callizonus is may not be out of place. The plant is cæspitose with linear-lanceolate leaves, widest in the middle and bluish in color, which distinguishes it even when out of flower from D. alpinus. The flowering stems of D. callizonus are grooved lengthwise, four to eight inches high, one-flowered with a flower of a deep rose and a center of embroidery in red purple. The plant comes from the mountains of Transylvania and Wallachia. Correvon says that it needs a well drained soil containing lime and watered from below. Farrer contends that the variety dreads lime and that he grew it in "a cool shady patch of rockwork, in loose spongy peat and leaf mold." My most recent experience has been outlined in the foregoing notes. Take your choice, but in any case grow D. callizonus some way if you would enjoy the finest of all pinks.